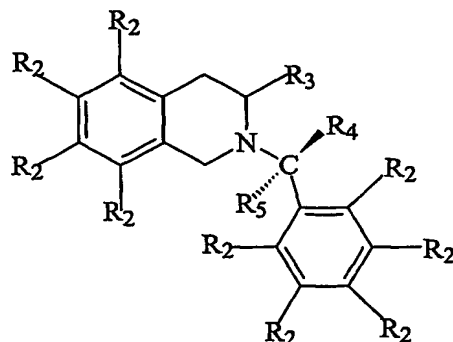


# CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1. A sulfated compound having the chemical structure:



wherein

R<sub>2</sub> is selected from the group consisting of hydrogen and sulfate moieties, and may be the same or different at each location, provided that at least one location is a sulfate moiety, and

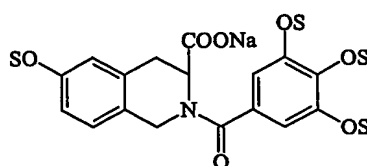
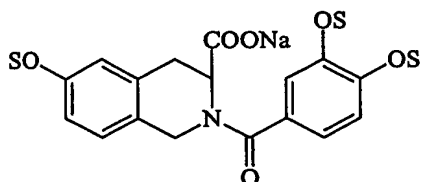
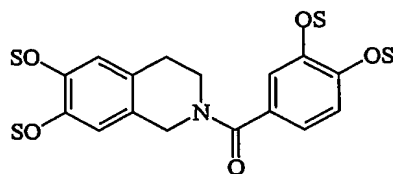
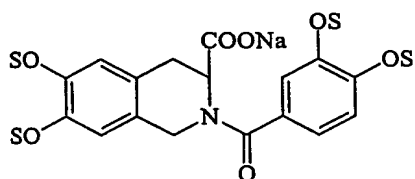
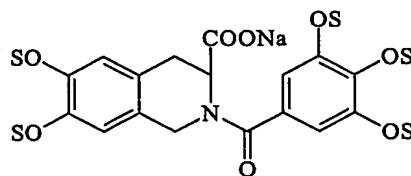
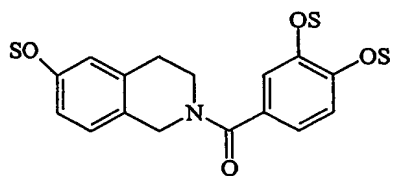
R<sub>3</sub> is selected from the group consisting of hydrogen and a carboxylate moiety,

R<sub>4</sub> is a hydrogen or oxygen, and

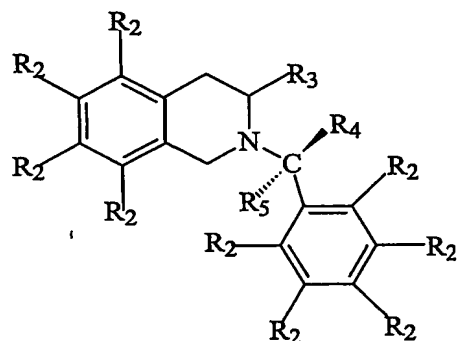
R<sub>5</sub> is a hydrogen if R<sub>4</sub> is a hydrogen, and is absent if R<sub>4</sub> is oxygen.

2. The sulfated compound of claim 1 further comprising at least one cation or cationic group selected from the group consisting of sodium, potassium, ammonium, and tetraalkylammonium.
3. The sulfated compound of claim 1 wherein R<sub>3</sub> is hydrogen.
4. The sulfated compound of claim 1 wherein R<sub>3</sub> is a carboxylate moiety.
5. The sulfated compound of claim 1 wherein at least two of R<sub>2</sub> are sulfate moieties.

6. The sulfated compound of claim 1 wherein at least three of  $R_2$  are sulfate moieties.
7. The sulfated compound of claim 1 wherein at least four of  $R_2$  are sulfate moieties.
8. The sulfated compound of claim 1 wherein at least five of  $R_2$  are sulfate moieties.
9. The sulfated compound of claim 1 wherein at least one of  $R_2$  on a phenyl ring and at least one of  $R_2$  on an isoquinoline ring is a sulfate moiety.
10. The sulfated compound of claim 1 wherein  $R_4$  is oxygen of a carbonyl and  $R_5$  is absent.
11. The sulfated compound of claim 1 wherein  $R_4$  and  $R_5$  are hydrogen.
12. The sulfated compound of claim 1 having a chemical structure selected from the group consisting of:



13. An anticoagulation method comprising the step of exposing blood or a component thereof to a compound having the chemical structure:



wherein

$R_2$  is selected from the group consisting of hydrogen and sulfate moieties, and may be the same or different at each location, provided that at least one location is a sulfate moiety, and

$R_3$  is selected from the group consisting of hydrogen and a carboxylate moiety,

$R_4$  is a hydrogen or oxygen, and

$R_5$  is a hydrogen if  $R_4$  is a hydrogen, and is absent if  $R_4$  is oxygen.

14. The method of claim 13 wherein the exposing step is performed extracorporeal.

15. The method of claim 13 wherein  $R_4$  is an oxygen.